Orbit of the Binary Star Σ 1938 near μ² Boötis.
By Mr. Hind.

The following elements fairly represent the measures of this star up to the date of nearest approach of the components:—

$$
\begin{array}{lll}
T & \dots & 1860 \cdot 88 \\
\text{Node} & \dots & 163° 11' \\
\lambda & \dots & 54\ 27 \\
\gamma & \dots & 41\ 52 \\
\phi = \sin^{-1} e & & 34\ 20 \cdot 4 \\
\alpha & \dots & 1'' \cdot 761
\end{array}
$$

Period of Revolution, $314^{\text{yrs}} \cdot 34$

| For 1865·46 | Dawes | $\theta\,(c - o)$ | $= -1°\cdot86$ |
| 1867·56 | Engelmann | | $= +1\cdot02$ |

In this orbit the angle and distance are thus given:—

1872·0	166·28	0·880
73·0	163·52	0·902
74·0	160·90	0·920
75·0	158·38	0·931
76·0	155·97	0·935

Orbit of the Binary Star ξ Boötis. By Mr. Hind.

Elements of this star were first given by Sir John Herschel in the *Memoirs* of this Society, and an orbit has also been computed by Mädler. The following elements appear to represent the whole course of measures better than any previously published:—

$$
\begin{array}{lll}
T & \dots & 1779 \cdot 75 \\
\text{Node} & \dots & 11° 23' \\
\lambda & \dots & 96\ 25 \\
\gamma & \dots & 71\ 36 \\
\phi & \dots & 51\ 28 \\
\alpha & \dots & 9'' \cdot 95
\end{array}
$$

Period, $168^{\text{yrs}} \cdot 91$ $\log \mu_0 = -0 \cdot 32864$

Hence the angles of positions and distances are—

1872·0	291·25	5·638
73·0	289·95	5·613
74·0	288·63	5·587
75·0	287·29	5·561
76·0	285·94	5·535

The measures of ξ *Ursæ Majoris*, published in the *Monthly Notice* for March by Mr. Knott, indicate that the peri-astron passage will fall earlier than assigned in the elaborately worked orbit of M. Yvon Villarceau (*Conn. des Temps*, 1852). The mean of Mr. Knott's measures give an angle of position 33° in advance of that computed. The angle in Capt. Jacob's orbit (*Mem. R. Astron. Soc.*, vol. xvi.) is 26° behind the observed one. Observations during the next few years will have great value for the better determination of the orbit of this star, which, as being the first submitted to calculation by M. Savary, possesses an especial interest.

On the large number of Stars visible to the Naked Eye in the Southern Heavens. By Richard A. Proctor, B.A. (Cambridge.)

Dr. Gould makes the following remarks in his address at the inauguration of the Argentine Observatory at Cordoba: "The transparency of the sky of Cordoba upon favourable nights may be judged of by a single additional fact. You will find in the treatises on astronomy the total number of stars in the entire heavens visible to the naked eye estimated at from 5500 to 6000. Now, we have already recorded in the *Uranometria Argentina* the places of not less than 6400 stars, visible to the unaided sight of every one of our observers, in the Southern Hemisphere alone; while in the first 10° of the Northern Hemisphere we have 800 more, making in all at least 7200 stars; so that we are justified in the belief that were the sky equally transparent for astronomers in the Northern Hemisphere, the total number of stars visible to the ordinary eye would be estimated at certainly not less than 11,000, instead of half that number."

It seems to me, that until the contrary has been demonstrated by some independent evidence, the circumstances recorded by Dr. Gould should be held to show that the southern skies are really richer in stars than the northern. It may be remembered that in the preface to my large Star Atlas I had already indicated my belief that there is an aggregation of lucid stars in the southern heavens,—this aggregation being however local, insomuch that certain parts of the southern heavens are exceedingly poor in stars, while others are as remarkably rich. Now, if Dr. Gould finds, on examining the arrangement of the 6400 stars observed at Cordoba, that the local aggregation I have spoken of exists,— a result of which I do not entertain the slightest doubt,—it will be evident that what is in question is a true law of stellar distribution, and not the greater transparency of southern skies.

I must confess I know of no evidence whatever tending to show that, *cæteris paribus*, the skies are more transparent in the

southern than in the northern hemisphere. Sir J. Herschel, by proposing to continue his photometric experiments on the stars during the whole continuance of his voyage home from the Cape, implied that he at least recognised no such distinction. Why, indeed, should the southern skies be more transparent than the northern? It is true that in passing southwards from our northern latitudes we gain regions where the skies are purer; but would not the inhabitant of corresponding southern latitudes find a corresponding change as he travelled northwards? The low barometer of high antarctic latitudes will not account for the supposed difference, and the greater extent of ocean surface in the southern hemisphere must far more importantly tend to render the southern skies less pure.